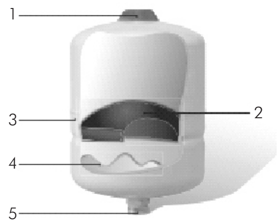
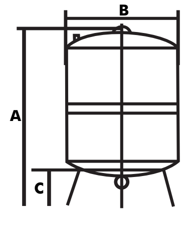
globalwater

Pressure Tanks

TANK DATA



1. Leak free, o-ring sealed air valve cap
2. Single diaphragm design
3. Two part polyurethane, epoxy primed paint finish
4. Virgin polypropylene liner
5. Patented stainless steel water connections



Model	Max. Pressure (bar)	Type	Dimensions			Weight (kg)
			A	B	C	
GWS24	10	Diaphragm	447	293	–	9
GWS60	16	Diaphragm	620	390	127	15
GWS100	16	Diaphragm	804	431	129	22
GWS300	16	Bladder	1230	640	130	79
GWS300	10	Diaphragm	1510	600	130	47

Pressure vessels are important components in automatic booster systems, the vessels cushioning pressure surges as the pump starts and stops and also provide drainage supply in to the system to reduce pump cycle frequency.

DAYLIFF Global Max pressure tanks are high specification units that are suitable for high pressure applications and include the following features:

- Super thick steel construction with polyurethane and epoxy painted paint finish for corrosion protection
- Polypropylene liner so tanks can be used for corrosive and hard waters
- Special diaphragm and air valve design that eliminates air leaks and the need for maintenance.

DAYLIFF Global Max pressure tanks are comprehensively tested and quality approved by a number of international standards organisations and are also FDA food grade approved pressure tanks. They are the ideal solution for all high specification water booster applications and will provide many years of maintenance free operations.

PRESSURE TANK SIZING GUIDE

Correct tank sizing is important and is determined by the system flow rate and pump start and stop pressure settings. Sizing must be based upon the system flow at which the maximum cycle frequency occurs. As a rule of thumb this can be taken as average flow between the cut-in and cut-out flow rates.

Required drain volume is then the maximum cycle frequency flow divided by twice the specified maximum number of cycles per hour. Generally 60 cycles per hour is considered acceptable. Tank size selected is then that nearest to the volume required. Some selected examples are as follows;

Pump Start Pressure (Bar)	2.5	3	3	4	5	6	10
Pump Stop Pressure (Bar)	4	5	6	8	10	12	15
Drainage (%)	28	31	41	43	43	45	29
Tank Model	**Drainage Volume (Litres)**						
GWS 24 Litres	7	8	10	11	11	12	7
GWS 60 Litres	17	18	24	26	26	27	17
GWS 100 Litres	28	31	41	43	43	45	29
GWS 300 Litres	84	93	123	129	179	135	87

- Correct tank precharge is critical and must be 0.2 Bar below the pump start pressure for pressure switch systems or 65% of the pump stop pressure for variable speed systems. Efficiency is greatly reduced if precharge is either too high or too low.
- Ensure that the difference between start and stop pressure is as high as possible as the larger the differential the greater the tank drainage capacity.
- Ensure the pump start pressure is higher than the system static pressure or else the pump will not start.
- Adjust pump stop pressure to be about 90% of the pumps closed head pressure.

NOTE: Oversizing tank size has many advantages including reduced energy consumption, reduced cycling, extended pump life due to reduced wear and reduced noise. As a rule doubling the calculated size will bring substantial benefits.

SELECTION EXAMPLE

System Parameters

Pump Start Pressure: 5 Bar

Pump Stop Pressure: 10 Bar

Maximum Working Temperature: 90°C

Stop Flow: 5m^3/hr

Start Flow: 10m^3/hr

Required Drainage Volume:

$$= \frac{\text{Average Flow Rate}}{\text{start per hour}} /2 = \frac{7500\text{ltr/hr}}{60\text{ starts/hr}} /2 = 63\text{ltr}$$

Drainage % based on start/stop pressure as per table: 43%

Required Tank Volume:

$$= \frac{\text{Required Drainage Volume}}{\text{Drainage \%}} = \frac{63}{0.43} = 146\text{ltr}$$

Tank Specification:

Use 2x100ltrs or 3x60ltrs